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UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
SAN FRANCISCO DIVISION

ALPHA & OMEGA SEMICONDUCTOR,
LTD., a Bermuda corporation; and
ALPHA & OMEGA SEMICONDUCTOR,
INC., a California corporation,

Plaintiffs and Counterdefendants,

v.

FAIRCHILD SEMICONDUCTOR
CORP., a Delaware corporation,

Defendant and Counterclaimant.

AND RELATED COUNTERCLAIMS.

Case No. C 07-2638 JSW
(Consolidated with Case No. C-07-2664 JSW)

**AOS'S REPLY CLAIM CONSTRUCTION
BRIEF PURSUANT TO PATENT L.R. 4-
5(c)**

Date: June 4, 2008
Time: 2:00 p.m.
Location: Courtroom 2, 17th Floor
Judge: Hon. Jeffrey S. White

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1 **I. INTRODUCTION**

2 In this reply brief, AOS addresses the four disputed terms/phrases from the three patents-
3 in-suit asserted by AOS against Fairchild.¹ In its opening brief, AOS demonstrated that its
4 proposed constructions are rooted firmly in the intrinsic evidence of the patents. In response,
5 Fairchild attempts to narrow severely the AOS patents by urging claim constructions that violate
6 several well-established rules regarding the interpretation of patent claims.

7 *First*, Fairchild attempts to import improper limitations into the claim language. For
8 example, with respect to AOS's '776 patent, Fairchild is attempting to add a limitation requiring
9 that the "peak concentration" of a compensating implant be found in the body region of the power
10 MOSFET device. The asserted claims do not contain the words "peak concentration" – indeed,
11 the '776 patent does not mention "peak concentration," and certainly never suggests that the
12 claims should be limited based on "peak concentration." Many of Fairchild's other arguments
13 improperly limit the claims to the specific embodiments of the specification.

14 *Second*, and perhaps most egregiously, Fairchild proposes constructions that would
15 exclude preferred embodiments of the inventions. The Federal Circuit has said repeatedly that a
16 construction that would exclude a preferred embodiment is rarely, if ever, correct. *See, e.g.,*
17 *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1583-4 (Fed. Cir. 1996). Fairchild's
18 proposed construction of the '567 patent term "several" ("three or more," according to Fairchild)
19 would exclude embodiments described in the patent showing only two lead wires. Fairchild's
20 attempt to exclude all trench-gate power MOSFET devices from the coverage of the '630
21 patent is based entirely on its mischaracterization of a preferred embodiment as a mere "throw
22 away example." Preferred embodiments cannot be so blithely ignored.

23 *Third*, as it does with respect to the terms arising from its own asserted patents, Fairchild
24 relies too heavily on extrinsic evidence: dictionaries and another lengthy declaration from its
25 retained expert, Dr. Blanchard. Fairchild's quick resort to extrinsic evidence is telling. It cannot
26 overcome AOS's constructions, which all have support in the intrinsic evidence.

27 ¹ AOS cites the opening claim construction brief of Alpha & Omega Semiconductor, Ltd.
28 and Alpha & Omega Semiconductor, Inc. (collectively, "AOS") as "AOS Opening Br." and to the
responsive brief filed by Fairchild Semiconductor Corp. ("Fairchild") as "Fairchild Resp. Br."

II. THE ‘567 PATENT

A. “Several” means “two or more.”

1. AOS’s construction of “several” is consistent with the claims and specification.

Claim 7 of the ‘567 patent should not be limited to an arbitrarily chosen number of gate runners, sub-contact areas, or lead-wires, as Fairchild proposes. The ‘567 patent invention reduces on-state resistance by distributing lead wires substantially uniformly over the source contact area of the device. *See* Declaration of Andrew J. Wu in support of AOS’s Opening Br., Ex. 1 (“Wu Ex. 1”), ‘567 patent, Abstract. Fairchild argues that “several” means “three or more” by ignoring preferred embodiments and ignoring the usage of the words “several” and plurality” in the specification.

a. The specification refers to two lead wires as “several lead wires” in connection with Figures 2C and 2D.

The proper construction of “several” is “two or more” because the specification uses “several” to describe two lead wires. As AOS explained in its opening brief, the specification uses “several” to describe the two lead wires in the right hand sub-contact areas of Figs. 2C and 2D. *See* AOS Opening Br. at 7:1-13 (discussing ‘567 Patent, col. 5:51-57).

Fairchild argues that AOS “misrepresents” the specification by selectively quoting the portion of the specification that, according to Fairchild, “makes clear that this section of the specification is directed only to Figure 2B.” Fairchild Resp. Br. at 5:16-6:10. To the contrary, column 5 at lines 51-57 describes Figs. 2C and 2D. The specification first describes Figs. 2A and 2B beginning at column 3:54; introduces 2C and 2D at column 5:15; continues with Fig. 3 at col. 5:58; and so on with Fig. 4 and Fig. 5 in col. 6. ‘567 patent. The relevant section at col. 5:51-57 thus describes the embodiments in Figs. 2C and 2D. And while the specification at col. 5:51-57 does refer to an area proportional ratio of 4:4:4:3, the text states “e.g., 4:4:4:3” – expressly noting that the ratio 4:4:4:3 is merely an example.^{2,3} Fairchild also asserts that col. 5, lines 51-57 refers

² Figures 2C and 2D show a device with ratios 3:3:3:2, but the specification does not refer to that ratio. Nevertheless, the claims must be read to cover the embodiments of Figs. 2C and 2D.

³ Throughout this brief, any emphasis in quoted material was added to the original text, unless noted otherwise.

1 to Fig. 2A and 2B rather than Fig. 2C and 2D because it refers to “lead wires 160,” which are
 2 labeled in Fig. 2B. Fairchild Resp. Br. at 5:22-23. This argument is incorrect and misleading,
 3 because the lead wires are feature 160 in all of the Figures 2A, 2B, 2C, and 2D, not just Fig. 2B.
 4 ‘567 patent, cols. 5:15-17, 5:25, 5:28, 5:35-36, 5:49, 5:55. This is how one of skill in the art
 5 would read the ‘567 patent. Declaration of C. Andre T. Salama submitted herewith (“Salama
 6 Reply Decl.”) ¶ 3.⁴

7 **b. The terms “several” and “plurality” are used interchangeably,**
 8 **and Fairchild admits that plurality means “two or more.”**

9 The proper construction of “several” is “two or more” because the specification uses the
 10 terms “several” and “plurality” interchangeably, and Fairchild concedes that the standard
 11 definition of “plurality” is two or more. Fairchild Resp. Br., 3:26-27.

12 Fairchild’s argument that the words are interchangeable only when there are groups of
 13 three or more is flawed. Fairchild Resp. Br. at 5:7-11. First, that the specification uses the words
 14 “several” and “plurality” interchangeably at all shows that the terms do not have distinct
 15 meanings. Second, Fairchild is simply incorrect. As discussed above, the patent at col. 5:51-57
 16 refers to the two lead wires of Figs. 2C and 2D as “several” lead wires. Since it also refers to “a
 17 plurality of lead wires,” it uses the terms interchangeably with respect to groups of two.

18 **c. The claim language does not require limiting “several” to**
 19 **“three or more.”**

20 Fairchild’s argument that the claim language supports Fairchild’s narrow construction is
 21 incorrect factually and legally. First, Fairchild states “[c]laim 7, the only claim of the ‘567 patent
 22 asserted in this litigation, recites the terms “plurality” and “several.” Fairchild Resp. Br. at 3:19-
 23 20. This is simply incorrect – claim 7 does not recite the term “plurality.”

24 7. A method to configure a source contact area on a power
 25 MOSFET device by dividing said source contact areas with several
 26 gate runners disposed thereon, said method including steps of:

27 ⁴ Fairchild argues that “several” must mean three or more because there must be more than
 28 one area proportional ratio, which requires three or more sub-contact areas. Fairchild Resp. Br. at
 cols. 3:28-4:9. That argument, however, is irrelevant, because AOS’s construction of “two or
 more” is consistent with three or more sub-contact areas. Fairchild’s example provides no basis
 for requiring “three or more” lead wires or gate runners, especially since three sub-contact areas
 only requires two gate runners.

(a) determining a total number of lead wires for connecting to a lead frame from said source contact area on said MOSFET power device; and

(b) configuring said gate runners for dividing said source contact area into several sub-contact areas with a set of area proportional ratios for disposing several of said lead wires in each of said sub-contact areas according to said set of area proportional ratios.

‘567 patent, col. 8:34-45. Fairchild simply mischaracterizes the claim language.

Moreover, the fact that the patent (in other claims) recites both “several” and “plurality” does not mandate that they must have different meanings. “[D]escribing claim elements or limitations in different words does not invariably change the scope of the claim.” *Inpro II Licensing, S.A.R.L. v. T-Mobile USA, Inc.*, 450 F.3d 1350, 1354 (Fed. Cir. 2006). The doctrine of claim differentiation is only applicable when the limitation in dispute is the only meaningful difference between dependent and independent claims. *Wenger Mfg., Inc. v. Coating Mach. Sys., Inc.*, 239 F.3d 1225, 1233 (Fed. Cir. 2001). The fact that the ‘567 patent recites “plurality” in other claims of the ‘567 patent and “several” in claim 7 (and others) does not mandate or even suggest that “several” and “plurality” must have different meanings, particularly given the many other differences between the claims.

Even the presumption that different terms have different meanings is only a presumption. *Inpro*, 450 F.3d at 1254. As Fairchild acknowledges, it may be overcome by evidence that different terms are used to mean the same thing. *See* Fairchild Resp. Br., at 3:19-27; *Pickholtz v. Rainbow Tech., Inc.*, 284 F.3d 1365, 1373 (Fed. Cir. 2002) (construing “computer” the same as “computer system” because the patent used them as synonyms, despite the fact that “we would ordinarily be inclined to give meaning to the word ‘system’”). Here, the ‘567 patent uses “plurality” and “several” interchangeably to describe “two or more.”

2. Fairchild cannot use dictionary definitions to construe “several” more narrowly than the specification.

Because the specification establishes that the inventors used “several” to mean two or more, the Court need not consult dictionaries. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1322-23 (Fed. Cir. 2005), *cert. denied*, 546 U.S. 1170 (2006) (holding that judges are free to consult dictionaries at any time, “so long as the dictionary definition does not contradict any definition

found in or ascertained by a reading of the patent documents”).⁵

Moreover, every dictionary cited in the parties’ briefs provides at least one definition consistent with the use of several as “two or more.” *See* Wu Ex. 5, Merriam Webster’s Collegiate Dictionary (“more than one”); *id.*, Ex. 4, The Oxford English Dictionary,⁶ at 4 (“more than one”); *id.*, Ex. 6, Microsoft Encarta Collegiate Dictionary (“a small number”); Jacobs Resp. Decl., Ex. 3, Webster’s Encyclopedic Unabridged Dictionary (“separate; different”).

B. AOS’s construction of the “configuring” element is correct and consistent with the patent.

1. The invention does not require determining the number of lead wires prior to configuring the gate runners.

Contrary to Fairchild’s characterization, the invention of the ‘567 patent does not require determining the number of lead wires prior to configuring the gate runners. Prior art designs, shown in Fig. 1A of the ‘567 patent, arbitrarily connected short lead wires 25 to the region of the contact areas close to the lead frame 20. As a result, power had to travel across the source contact area over a long path before reaching the conductive lead wires. Wu Ex. 1, ‘567 patent, col. 1:37-65. The ‘567 patent invention reduced on-state resistance, $R_{DS(on)}$, by distributing the lead wires over the source contact area and spreading the points of contact for the lead wires over the contact area. ‘567 patent, Abstract, col. 2:29-34, col. 5:1-14; Salama Reply Decl. ¶ 4. The ‘567 patent describes several approaches to this distribution, including distributing and configuring the lead wires so that the number of lead wires is proportional to the contact areas. *Id.* *See, e.g.*, ‘567 patent at col. 3:67-col. 4:60. This aspect of the invention is recited in claim 7. Salama Reply Decl. ¶ 4.

Fairchild’s argument that the method “would not work” and “would be impossible” unless the number of lead wires is first determined is simply wrong. *See* Fairchild Resp. Br. at 9:22-10:10; Salama Reply Decl. ¶¶ 4, 5. One can configure the gate runners and then determine a

⁵ In *Phillips*, the Federal Circuit clarified that extrinsic evidence is “less significant than the intrinsic record,” and that unsupported assertions of an expert “are not useful to a court.” *Phillips*, 415 F.3d at 1317-18.

⁶ The definition in the Oxford English Dictionary is pertinent and appropriate because a patent is a legal document that conveys legal rights, and the parties ask the Court to determine the legal meaning of the non-technical word “several.”

1 number of lead wires to be applied in ratios proportional to the areas of the sub-contact areas, or
 2 determine the number of lead wires and then configure the gate runners. *Id.* For example, one
 3 could divide a contact area into 4 equal sub-contact areas, identify the area proportional ratios as
 4 1:1:1:1, and subsequently determine the number of lead wires and divide those lead wires
 5 according to the area proportional ratio of 1:1:1:1.⁷ *Id.* Likewise, Fairchild’s argument that
 6 “none of the four equations provided in column four of the ‘567 patent can be performed if the
 7 total number of lead wires is not known,” Fairchild Resp. Br. at cols. 9:24-10:1, is simply wrong
 8 – the equations can be applied starting with the number of gate runners or the number of lead
 9 wires, so long as the area proportional distribution is achieved.

10 Fairchild’s argument that dividing the source contact area into sub-contact areas must be
 11 the “final step” (Fairchild Resp. Br. at 8:7-9:2) in a prescribed sequence is both factually and
 12 legally wrong. The specification repeatedly describes *first* dividing the source contact area using
 13 gate runners, and *then* distributing the lead wires. ‘567 patent, col. 3:60-66; col. 4:54-60. In any
 14 event, the claims should not be limited to a specific sequence recited in the specification.
 15 *Phillips*, 415 F.3d at 1323 (“although the specification often describes very specific embodiments
 16 of the invention, we have repeatedly warned against confining the claims to those embodiments”).

17 Indeed, the specification expressly notes that the invention should not be limited to the
 18 disclosed embodiments:

19 Although the present invention has been described in terms of the
 20 presently preferred embodiment, it is to be understood that such
 21 disclosure is not to be interpreted as limiting. Various alternations
 22 and modifications will no doubt become apparent to those skilled in
 23 the art after reading the above disclosure. Accordingly, it is
 intended that the appended claims be interpreted as covering all
 alternations and modifications as fall within the true spirit and
 scope of the invention.

24 ‘567 patent, col. 7:24-32. Fairchild’s proposed limitation defies this directive from the inventors.

25 Turning to the claim language, Fairchild does not and cannot argue that the steps of:

26 ⁷ Similarly, Fairchild’s characterization that the invention “takes packaging into account
 27 during the design of the power MOSFET” mischaracterizes the ‘567 patent. *Id.* at 9:14-17. The
 invention described in the patent involves distributing the lead wires according to area
 28 proportional ratios, not a mental sequence of counting lead wires prior to configuring the gate
 runners. *E.g.*, ‘567 patent, col. 2:36-42, cols. 2:57- 3:10.

1 determining a total number of lead wires for connecting to a lead
 2 frame from said source area on said MOSFET power device
 3 and
 4 configuring said gate runners for dividing said source contact area
 5 into several sub-contact areas with a set of area proportional ratios
 6 explicitly or implicitly require that the “determining” step precede the “configuring” step. *Id.*,
 7 col. 8:38-43. Instead, Fairchild seizes on the phrase “said lead wires” in the phrase “for disposing
 8 said lead wires in each of said sub-contact areas.” Fairchild Resp. Br. at 7. But the mere fact that
 9 the claim language recites “said” lead wires does not mandate that the “determining” step must
 10 have been completed before the “configuring” step. Rather, the use of “said” merely reflects that
 11 the term “lead wires” was previously recited within the claim. Process claims, however, are not
 12 limited to the order in which they are recited, unless required by the intrinsic evidence.
 13 *Interactive Gift Express v. Compuserve Inc.*, 256 F.3d 1323, 1343 (Fed. Cir. 2001) (“[u]nless the
 14 steps of a method actually recite an order, the steps are not ordinarily construed to require one.”).

15 In *Interactive Gift Express* – a case cited by Fairchild – the Federal Circuit declined to
 16 impose a sequence on the steps of a process claim, concluding that “part of step four is performed
 17 before step three, and part is performed after step three.” *Id.* at 1344. Here, element (b) of claim
 18 7 includes two parts: first, “configuring said gate runners ... with a set of area proportional
 19 ratios,” (the claim element being construed) and second, “for disposing several of said lead wires
 20 in each of said sub-contact areas according to a set of area proportional ratios.” Even if the Court
 21 were to conclude that the second part of the step, “disposing,” must occur after the step of
 22 “determining a total number of lead wires,” it would not be appropriate to impose a sequence on
 23 the claim elements because the first part of the step, “configuring,” need not occur after
 24 determining the total number of lead wires.

25 Finally, Fairchild can muster no response to AOS’s point that a comparison of claim 7
 26 with claim 8 demonstrates that no sequence should be imposed on claim 7. AOS Opening Br. at
 27 10:3-10. In contrast to claim 7, claim 8 recites “configuring said gate runners according [to] said
 28 total number of lead wires.” If the inventors had intended to require the “configuring” step in
 29 claim 7 to be based on the number of lead wires, they would have used the language of claim 8.

1 **2. The sub-contact areas can be equal in size.**

2 Fairchild's assertion that the sub-contact areas must be "not all equal in size" is flatly
3 contradicted by the specification. In its opening brief, AOS demonstrated how the specification
4 expressly contemplates sub-contact areas of equal size. *See* AOS Opening Br. at 10-11. The
5 specification provides an equation employing the defined term " $N_{\text{REMAINDER}}$." The patent
6 expressly states that $N_{\text{REMAINDER}}$ can equal zero. Wu Ex. 1, '567 patent, at col. 4:34-35. When
7 $N_{\text{REMAINDER}}$ equals 0, however, each sub-contact area has the same area, and therefore the same
8 number of lead wires. Accordingly, *each sub-contact is approximately the same size. Id.* at col.
9 4:51-53.

10 Fairchild offers no response on this point.

11 Instead, Fairchild resorts to mischaracterization of the prosecution history. Fairchild
12 Resp. Br. at 10:24-11:9. Fairchild asserts that the sub-contact areas in claim 7 must be different
13 sizes because the Examiner noted that "Claims [1-8] are considered allowable over the art of
14 record because of the [specific] recitation of different size subcontact areas, angled contact areas,
15 and configuring [gate runners] according to a set of area proportional ratios." *Id.* at 10:25-28
16 (quoting Office Action).⁸ Fairchild then asserts that "the examiner viewed the claims as requiring
17 different size sub-contact areas." *Id.* at 11:4-5.

18 Fairchild's argument mischaracterizes this history. The compound statement quoted by
19 Fairchild recites multiple separate limitations for multiple separate claims. Claims 1, 5, and 6
20 recite different size sub-contact areas. Thus, the Examiner's statement regarding different size
21 sub-contact areas plainly related to the reason why claims 1, 5, and 6 were allowable. Likewise,
22 claim 2 recites angled sub-contact areas, and the Examiner's statement regarding that limitation
23 plainly related to claim 2. The Examiner's statement regarding "area proportional ratios," related
24 to claim 7, which recites that limitation. There is no reason to believe that the statements
25 regarding different size sub-contact areas were intended as a limitation of claim 7, which does not
26 recite that limitation.⁹

27 ⁸ In its quotation, Fairchild erroneously omitted "specific."

28 ⁹ In contrast to the definition of terms in the prosecution history of Fairchild's asserted
patents, the language Fairchild relies on here does not define the term at issue, or even relate to

1 **3. Claim 7 does not require mathematical precision in the size of the**
 2 **subcontact areas.**

3 AOS's proposes that the "area proportional ratios are defined by the ratios of the
 4 approximate areas of the sub-contact areas." As AOS demonstrated in its opening brief, the
 5 embodiments of the specification do not employ area proportional ratios that are exactly defined
 6 by the areas of the sub-contact areas. AOS Opening Br. at 11:23-12:9. As such, Fairchild's
 7 construction is not only inconsistent with the specification, but would exclude those embodiments
 8 of the patent.¹⁰

9 Fairchild belittles this argument, calling it "nonsense," but offers no substantive rejoinder.
 10 Fairchild Resp. Br. at 11:13. Indeed, Fairchild acknowledges that "[t]he specification uses the
 11 term 'approximate' with regard to the area proportional ratios." *Id.* at 11:15-16. In fact, the patent
 12 identifies "sub-contact areas having a proportion of approximately 4:4:4:3," col. 4:57-58, and that
 13 "[b]ased on this ratio, the contact areas are then divided by the gate runners to have substantially
 14 the same ratio," col. 4:51:63. Unable to rebut the specification, Fairchild merely argues that the
 15 specification should be ignored, because "the inventors chose not to include the term
 16 'approximate' in the claim language," and "[t]he inventors are bound by their choice of words."
 17 *Id.* at 11:16-17 (citing to Kahrl, Patent Claim Construction). The Kahrl treatise, however, does
 18 not trump the Federal Circuit law establishing that the claims must be construed in light of the
 19 specification, and should not be construed to exclude preferred embodiments. *Phillips*, 415 F.3d
 20 at 1315; *Vitronics*, 90 F.3d at 1583-4.

21 **III. THE '630 PATENT: THE ASSERTED CLAIMS COVER BOTH PLANAR AND**
 22 **TRENCHED-GATE POWER MOSFET DEVICES.**

23 Fairchild improperly seeks to limit the scope of every claim of the '630 patent to exclude
 24 trenched-gate products. On its face, the claim language does not exclude trench-gate products.
 25 Further, the specification identifies trench-gate products as a preferred embodiment of the
 26 invention of the '630 patent. Fairchild cannot overcome this preferred embodiment simply by

27 the asserted claim.

28 ¹⁰ Although AOS's discussion focused on Figure 2A, the same analysis would apply 2B, 2C,
 and 2D, which also include a gate contact pad which occupies some portion of the surface, so that
 the areas are not exactly proportional.

(mis)characterizing it as a “throw away” embodiment. Fairchild Resp. Br. at 19:6-8.

A. Trenched-Gate Devices Are A Preferred Embodiment Of The ‘630 Patent.

A construction that would exclude a preferred embodiment is rarely, if ever, correct. *Vitronics*, 90 F.3d at 1583-4; *Verizon Servs. Corp. v. Vonage Holdings Corp.*, 503 F.3d 1295, 1305 (Fed. Cir. 2007).

It is undisputed that the ‘630 patent includes a trenched-gate embodiment. Figure 6 of the patent depicts a trench gate design, as shown below.

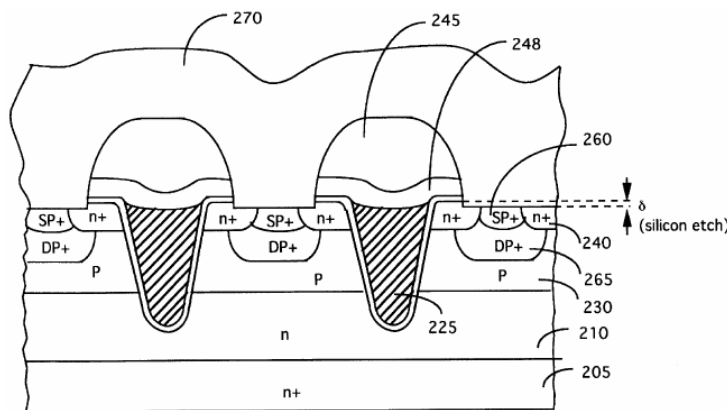


FIG. 6

The specification describes this embodiment as “manufactured by a similar process as described above [regarding planar gates],” but expressly noting that this embodiment employs “trenched gate 225.” Wu Ex. 3, ‘630 patent, cols. 8:55-9:7.

Fairchild mischaracterizes this as a “throw away example” apparently because the specification does not discuss this embodiment in the same level of detail as it does the planar embodiments.¹¹ The specification teaches a planar embodiment in Figures 3A-3D and 5A-5F, and corresponding text. Having provided a very detailed description for planar devices, the inventors did not repeat, and were not required to repeat, the same level of detail for trenched-gate devices. *See Spectra-Physics, Inc. v. Coherent, Inc.*, 827 F.2d 1524, 1534 (Fed. Cir. 1987) (“[a] patent need not teach, and preferably omits, what is well known in the art.”). Here, the process of defining trenched gates was well-known at the time the ‘630 patent was filed. Salama Reply Decl. ¶ 6.

¹¹ Fairchild’s reliance on *Sinorgchem Co. v. ITC*, 511 F.3d 1132 (Fed. Cir. 2007) is badly misplaced. In *Sinorgchem*, the specification stated “a ‘controlled amount’ of protic material is an amount up to that which inhibits the reaction of ... [etc].” *Id.* at 1136. By imposing the patentee’s explicit definition, the independent claims did not cover one embodiment out of the 21 embodiments of the specification. *Id.* at 1138. *Sinorgchem* does not justify disregarding in the present case the well-settled rule that claims should not be construed to exclude preferred embodiments. *Vitronics*, 90 F.3d at 1583-4; *Micrel Inc. v. Monolithic Power Sys.*, 2006 U.S. Dist. LEXIS 45860, *12 (N.D. Cal. June 28, 2006) (White, J.) (“[g]enerally, courts should not construe terms in a manner that would exclude a preferred embodiment”).

1 **B. The Claim Language Is Not Limited To Planar Devices.**

2 There is a heavy presumption that claim terms carry their full ordinary and customary
3 meaning unless the patentee unequivocally imparts a novel meaning or expressly relinquishes
4 claim scope. *Omega Eng'g, Inc. v. Raytek Corp.*, 334 F.3d 1314, 1323 (Fed. Cir. 2003). Unless a
5 specification *requires* a limitation, that limitation should not be read into the claims. *Specialty*
6 *Composites v. Cabot Corp.*, 845 F.2d 981, 987 (Fed. Cir. 1988).

7 The claim language of the '630 patent does not support Fairchild's proposed exclusion of
8 trenched-gate devices. The claim language includes (a) applying a polysilicon mask; then
9 (2) etching the polysilicon layer; thus (3) defining the gates. '630 patent, at 9:65-67. There is
10 nothing in the claim that would restrict the claim to planar devices. *Id.* at 9:58-10:19. A mask is
11 applied, and etching is employed, to define gates in both planar and trench gate power MOSFETs.
12 *Id.* Fairchild's assertion that "AOS interprets the claim term to require no relationship among the
13 phrases at all" is simply wrong. *See* Fairchild Resp. Br. at 16:16-18.

14 **C. AOS's Construction Is Consistent With The Teaching Of The Patent.**

15 Relying heavily on the assertions of Dr. Blanchard, Fairchild argues at length that its
16 construction is consistent with the specification. Fairchild Resp. Br. at 13:14-18:17. This
17 argument misses the point. AOS does not dispute that the claim *can* cover a planar gate device.
18 The issue is Fairchild's improper attempt to *limit* the claims to a planar device, and exclude
19 trenched-gate devices, as discussed above.

20 In particular, Fairchild seeks to limit the claim to a particular method of defining the gates.
21 *E.g.*, Fairchild Resp. Br. at 15:7-16:4. But the inventors did not propose a novel way to define
22 gates.¹² In the Summary of the Invention, the inventors identified two objectives: a "fabrication
23 process to form the self-aligned deep and shallow high-concentration body-dopant regions to
24 improve the device ruggedness and to remove a top portion of the lightly doped source region to
25 reduce contact resistance." '630 patent at 3:59-63. The patent repeatedly emphasizes these two
26 objectives. '630 patent at 4:1-7; 4:29-33; 5:49-52; 5:64-6:2; 6:11-12; 8:57-59; 8:63-65.

27 ¹² Fairchild's example of fabricating a trenched-gate power MOSFET *based on its own*
28 *patent*, carries little or no weight on how to construe a term in the '630 patent. Fairchild Resp.
Br. at 17:13-18:17.

1 The trenched-gate embodiment in the specification includes the stated objectives of the
 2 invention. First, the text identifies the creation of the self-aligned deep and shallow high-
 3 concentration body regions in the trench design of Figure 6. '630 patent at 8:55-65. Further, Fig.
 4 6 shows the removal of a top portion of the source contact area. '630 patent at Fig. 6 (showing a
 5 silicon etch of the source region of depth δ). The specification thus teaches these two objectives
 6 of the patent in the context of trenched-gate devices. Fairchild admits that the patent's discussion
 7 of trenched-gate devices covers the crux of the claimed invention. Fairchild Resp. Br. at 19:3-5.

8 Fairchild also argues that a mask is not used to define the gates in a trenched gate design,
 9 relying on Dr. Blanchard's description of the process for forming a trenched gate. Fairchild Resp.
 10 Br. at 17:13-18:17. Even if Dr. Blanchard's description were correct, and even if the process he
 11 described were the only process for forming trench gates, Fairchild's argument would simply be
 12 another way of arguing that trenched gate designs should be excluded from the claims which
 13 would be improper as discussed above.

14 Moreover, Fairchild's own example shows that etching the polysilicon defines the vertical
 15 dimension of the gates. Fairchild Resp. Br. at 18:1-13. Fig. 4E shows the height of the
 16 polysilicon before etching, and Fig. 4F shows the height after etching. *Id.* In particular, note the
 17 recess of the polysilicon below the surface in Fig. 4F. *Id.* at 18:10-13. The top of the recess
 18 defines the gate in the vertical dimension, and is determined by the depth of the etch. Also note
 19 that in Fairchild's example, there were no "gates" before etching the polysilicon layer – there was
 20 just a layer of polysilicon that covered everything. *Id.* Fig. 4F further shows the mask (or a
 21 portion of the mask), and shows that the mask prevented etching the polysilicon below it.

22 **D. Fairchild's Resort To Dictionary Definitions Fails To Overcome The Intrinsic**
 23 **Evidence Supporting AOS's Proposed Construction.**

24 Because the intrinsic evidence is sufficient to understand the disputed phrase, Fairchild's
 25 citation to general purpose dictionaries¹³ is superfluous. *Vitronics*, 90 F.3d at 1583 ("[i]n most
 26 situations, an analysis of the intrinsic evidence alone will resolve any ambiguity in a disputed
 27 claim term."); *Phillips*, 415 F.3d at 1322 ("a general-usage dictionary cannot overcome art-

28 ¹³ In addition, Fairchild did not previously disclose these definitions in either the 4-2 or 4-3 disclosures.

specific evidence of the meaning of a claim term”) (internal quotations omitted).

IV. THE ‘776 PATENT: A “COMPENSATING” IMPLANT NEED NOT HAVE ITS “PEAK CONCENTRATION” IN THE BODY OF THE DEVICE.

Fairchild proposes to narrow the ‘776 patent by requiring that the “peak concentration” of the compensating implant be located in the compensated body region. The term “peak concentration” appears *nowhere* in the patent. Fairchild’s attempt to add this additional limitation to the claims relies almost entirely on a declaration from Dr. Blanchard.

A. AOS’s Proposed Construction Is Based Properly On The Intrinsic Evidence.

The claim language itself defines what it means to compensate a portion of the body region. Compensating the body region is performed by “implanting material of said second conductivity type in said body region.” Wu Ex. 2, ‘776 patent, col. 9:14-16. This definition has three parts: (1) implanting material; (2) which has the “second” conductivity type; and (3) and the material goes into the body region. AOS’s proposed definition matches this definition from the claim language because the “second” conductivity type is opposite the conductivity type of the body. ‘776 patent at col. 9:5-20.

The specification provides the same description of how to compensate the body:

A predetermined portion of the body region adjacent to the source region is compensated in impurity concentration by ion implanting a material of the second conductivity type into the body region.

‘776 patent at col. 3:55-58. In particular, if material of the second conductivity type implants into the body region, the limitation is satisfied. With a clear and unambiguous construction from the intrinsic evidence, the court need not look further.

B. Fairchild’s Proposed Construction – Based On A Term That Appears Nowhere In The ‘776 Patent – Must Be Rejected.

Fairchild proposes additional limitations to this claim element based on the “peak concentration” of the implant:

Implanting impurities of the second conductivity type into the body region such that the peak concentration of that implant is located in the body region, and such that the conductivity type at the location of the peak concentration of that implant does not change.

As AOS pointed out in its opening brief, “peak concentration” does not appear in the claims,

1 specification, or prosecution history. Thus, Fairchild's proposed construction is heavily based on
 2 the assertions of Dr. Blanchard, its hired expert. *See, e.g.*, Fairchild Resp. Br. at 19:11-25:15
 3 (citing to Dr. Blanchard's declaration 14 times). The claim language and specification supporting
 4 AOS's construction outweigh Dr. Blanchard's litigation-induced assertions. *Biagro Western*
 5 *Sales, Inc. v. Grow More, Inc.*, 423 F.3d 1296, 1302-3 (Fed. Cir. 2005) (rejecting claim
 6 construction based "heavily" on expert testimony.)¹⁴

7 To the extent Fairchild or Dr. Blanchard address the intrinsic evidence, their analysis is
 8 misguided. They purport to interpret the embodiments of the '776 patent, but, even if their
 9 interpretations are accepted, they cannot justify *limiting* the claims to those embodiments. For
 10 example, Fairchild describes conditions that "can" occur in the embodiments described in the
 11 patent, and asserts that they therefore "must" occur in the recited claims. Fairchild Opp. Br. at
 12 21:25-26; 22:5-6. The specification states that "Profile 70B can be higher in amplitude and can
 13 be coincident with the peak value of the body diffusion curve 66." '776 patent at 7:48-50. Thus
 14 profile 70B *may be* lower in amplitude and *may not* be coincident with the peak value of body
 15 diffusion curve 66. In particular, there is no requirement that profile 70B have a peak in the body
 16 region. Further, there is no requirement that the peak of curve 70B be the same as the peak of the
 17 combined curve 70. *See* Fairchild Resp. Br. at 22:19-20 (failing to provide any support for its
 18 assertion that they are the same). In fact, because profile 70B may be lower in amplitude than
 19 profiles 70A and 70C, the combined profile 70 may not even have a clear peak. Salama Reply
 20 Decl. ¶ 10. Moreover, implants 70A, 70B, and 70C are merely examples. '630 patent at 8:44-45.

21 Fairchild's argument that implants 70A, 70B, and 70C are not called "compensating
 22 implants" is irrelevant. *See* Fairchild Resp. Br. at 22:24-23:5. The function of the individual
 23 implants matters, not the label. Each of the profiles 70A, 70B, and 70C is part of the

24 ¹⁴ Dr. Blanchard is wrong in any event. Whether the body region is compensated is based
 25 on the location of real atoms, not on the statistical average location of the "peak concentration."
 26 Salama Reply Decl. ¶¶ 7,8. Both the claims and the specification state that compensating
 27 involves implanting *material* into the body region. '776 patent at 3:55-58; 9:14-16. Fairchild, on
 28 the other hand, proposes to ignore the location of real atoms and identify compensation based
 solely on the *average* location (at the "peak concentration"). Regardless of how much impurity
 material is implanted into the body region, Fairchild argues that there is no compensation unless
 the average location is in the body region. Fairchild's proposal contradicts both the intrinsic
 evidence and common sense.

1 compensation curve 70. '776 patent at 7:64-66. As part of the compensation curve, each of the
 2 profiles 70A, 70B, and 70C compensates the body region – there are no superfluous implants.
 3 Salama Reply Decl. ¶ 9. The implantation in 70A “implant[s] material of said second
 4 conductivity type in said body region,” but has a peak in the source region, directly contradicting
 5 Fairchild’s proposed definition. '776 patent at 9:15-16, Figs. 4 and 5.

6 The Court must also reject Fairchild’s proposed limitation about not changing
 7 conductivity type because it is based on the flawed usage of “peak concentration.” As
 8 demonstrated above, implant peaks are not relevant to whether material has been implanted into
 9 the body region. The body may be “compensated” even if the peak compensation of the implant
 10 is located in the source. In addition, there can be multiple implants to compensate the body,
 11 without a well-defined peak, rendering Fairchild’s proposed claim language meaningless. '776
 12 patent, Fig. 5; Salama Reply Decl. ¶ 10.

13 Fairchild resorts to mischaracterization, asserting that “AOS argues that a compensating
 14 implant can convert the conductivity type of the material into which the dopants are implanted.”
 15 Fairchild Resp. Br. at 24:26-27. This is just wrong. Tellingly, Fairchild was unable to cite any
 16 AOS statement to support this assertion.

17 **V. CONCLUSION**

18 For the foregoing reasons, the Court should adopt AOS’s proposed constructions of the
 19 disputed terms from the AOS patents-in-suit.

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